

ABSTRACT OF THE DISCLOSURE

A process of lateral crystallization is provided for increasing the lateral growth length (LGL). A localized region of the substrate is heated for a short period of time. While the localized region of the substrate is still heated, a silicon film overlying the substrate is irradiated to anneal the silicon film to crystallize a portion of the silicon film in thermal contact with the heated substrate region. A CO₂ laser may be used as a heat source to heat the substrate, while a UV laser or a visible spectrum laser is used to irradiate and crystallize the film.

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